THE CLAIMS:

The status of the claims is as follows:

1. (previously presented) A hard disk drive, comprising:

at least one hard disk;

at least one slider corresponding to each disk;

a bias voltage source applying a predetermined bias voltage between a slider body and the corresponding hard disk, the predetermined bias voltage including a DC component and an AC component and being based on a flying-height spacing of the slider body.

2. (previously presented) The hard disk drive according to claim 1, wherein the predetermined bias voltage is based on a minimum slider-to-disk clearance change from a design flying height of the slider at a frequency of the AC component as the DC component of the predetermined bias voltage is varied.

3. (previously presented) The hard disk drive according to claim 1, wherein the predetermined bias voltage is based on a minimum electrodynamic response of the slider to a first harmonic of the AC frequency of the AC component as the DC component is varied.

4. (previously presented) The hard disk drive according to claim 1, wherein the flying-height spacing of the slider body is detected using a Laser Doppler Vibrometer.

5. (previously presented) The hard disk drive according to claim 1, wherein the flying-height spacing of the slider body is detected by a read element on the slider body sensing a magnetic readback signal at a frequency of the AC component as a magnitude of the DC component is varied.

6. (previously presented) The hard disk drive according to claim 5, wherein the AC component is a swept-frequency AC signal.

7. (previously presented) The hard disk drive according to claim 5, wherein the AC component is a single-frequency AC signal.

8. (previously presented) The hard disk drive according to claim 5, wherein the detected magnetic readback signal is a Position Error Signal relating to a position of the slider body with respect to the hard disk.

9. (previously presented) The hard disk drive according to claim 1, wherein the predetermined bias voltage is based on a minimum interference between the slider body and the hard disk as the DC component is varied.

10. (previously presented) The hard disk drive according to claim 1, wherein the predetermined bias voltage is applied to the slider body with respect to the hard disk.

11. (previously presented) The hard disk drive according to claim 1, wherein the predetermined bias voltage is applied to the hard disk with respect to the slider body.

12. (previously presented) The hard disk drive according to claim 1, wherein the bias voltage source controls a magnitude of the predetermined voltage bias on the detected flying-height spacing of the slider body.

13. (previously presented) The hard disk drive according to claim 12, wherein the predetermined bias voltage is based on a minimum slider-to-disk clearance change from a design flying height of the slider at a frequency of the AC component as the DC component is varied.

14. (previously presented) The hard disk drive according to claim 12, wherein the predetermined bias voltage is biased on a minimum interference between the slider body and the hard disk at a frequency of the AC component as the DC component is varied.

15. (previously presented) A hard disk drive, comprising:

at least one hard disk;

at least one slider corresponding to each disk;

a bias voltage source applying a predetermined bias voltage between a slider body and the corresponding hard disk, the predetermined bias voltage including a DC component that is based on a minimum variation of current that flows on and off the slider body as the DC component is varied.

16. (previously presented) A hard disk drive, comprising:

at least one hard disk;

at least one slider corresponding to each disk;

a bias voltage source applying a predetermined bias voltage between a slider body and the corresponding hard disk, the predetermined bias voltage including a DC component and being based on a detected level of interference between the slider body and the hard disk.

17. (previously presented) The hard disk drive according to claim 16, wherein the slider includes a magnetoresistive element, and wherein the detected level of interference between the slider body and the hard disk is based on a minimum resistance of the magnetoresistive element as the Dc component is varied.

18. (previously presented) The hard disk drive according to claim 16, wherein the detected level of interference between the slider body and the hard disk is based on an output of a piezoelectric sensor sensing contact between the slider body and the hard disk as the DC component is varied.

19. (previously presented) The hard disk drive according to claim 16, wherein the detected level of interference between the slider body and the hard disk is based on an output of an acoustic emission sensor sensing contact between the slider and the hard disk as the DC component is varied.

20. (previously presented) The hard disk drive according to claim 16, wherein the predetermined bias voltage is applied to the slider body with respect to the hard disk.

21. (previously presented) The hard disk drive according to claim 16, wherein the predetermined bias voltage is applied to the hard disk with respect to the slider body.

22. (previously presented) The hard disk drive according to claim 16, wherein the bias voltage source controls a magnitude of the predetermined voltage based on the detected level of interference between the slider body and the hard disk.